STIC Search Report
EIC 3700

STIC Database Tracking Number: 191257

TO:	From:
Jessica Reidel **Location: RND 5d74** **Art Unit: 3766** **Friday, June 09, 2006** **Case Serial Number: 10/716862**	**John Sims** **Location: EIC 3700** **RND 8B31** **Phone: 571 272-3507** **john.sims@uspto.gov**

Search Notes

Examiner Reidel:

The specific requirements of this case—applying a growth-reducing current of electricity to at least a portion of the growth plate—are not found in the literature, except for the published article of the inventors Dodge and Bowen.
There is an abundance of experimental literature describing the application of electricity to encourage bone growth, however.

Reidel, Jessica AU 3706 RND5/D74

12/3,K/1 (Item 1 from file: 65)
DIALOG(R)File 65:Inside Conferences

04953654 INSIDE CONFERENCE ITEM ID: CN051623506
AFFECTING GROWTH ARREST BY ELECTRICAL CURRENT **IN RABBIT** GROWTH PLATES : **A MODEL OF EPIPHYSIODESIS**
Oh, C.-W.; Tokmakova, K.; Aroojis, A.; Li, R.; Potter, K.; Simon , B.; Bowen, J. R.; Dodge, G. R.
CONFERENCE: Orthopaedic Research Society-Annual meeting; 49th
TRANSACTIONS OF THE ANNUAL MEETING-ORTHOPAEDIC RESEARCH SOCIETY , 2003; VOL 49; SECT 1 P: 21
ORS, 2003
ISSN: 0149-6433
LANGUAGE: English DOCUMENT TYPE: Conference Extended abstracts
CONFERENCE SPONSOR: Orthopaedic Research Society
CONFERENCE LOCATION: New Orleans, LA 2003; Feb (200302) (200302)

AFFECTING GROWTH ARREST BY ELECTRICAL CURRENT **IN RABBIT** GROWTH PLATES : **A MODEL OF EPIPHYSIODESIS**
?

RUSH

9/9/3 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX

016206177 **Image available**
WPI Acc No: 2004-364063/200434
Related WPI Acc No: 2004-727518; 2005-037850
XRAM Acc No: C04-137352
XRPX Acc No: N04-291208

Bone screw for partial insertion into bone and/or cartilage, comprises lower portion including interface(s) that is designed to partially discharge electrical current **and/or medical substance, to or adjacent to bone and/or cartilage**

Patent Assignee: SPINECO INC (SPIN-N)
Inventor: BISCUP R S

Number of Countries: 106 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20040073221	A1	20040415	US 2002269601	A	20021011	200434	B
WO 200432771	A1	20040422	WO 2003US31277	A	20031002	200434	
AU 2003299909	A1	20040504	AU 2003299909	A	20031002	200465	

Priority Applications (No Type Date): US 2002269601 A 20021011
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20040073221	A1		22	A61B-017/56	
WO 200432771	A1	E		A61B-017/56	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

AU 2003299909	A1			A61B-017/56	Based on patent WO 200432771

Abstract (Basic): US 20040073221 A1

NOVELTY - A bone screw for partial insertion into a bone and/or cartilage, comprises a head (20) and a lower portion (30) connected to the head, the lower portion including at least one interface that is designed to partially discharge an **electrical current** and/or a medical substance, to or adjacent to the bone and/or cartilage.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for partially inserting a connector into a bone and/or cartilage comprising selecting a connector that includes a bone screw, nail or post having a head and a lower portion connected to the head; at least partially inserting the connector into the bone and/or cartilage; and discharging the **electrical current** , and/or the medical substance, to promote healing of the bone and/or cartilage about the connector.

USE - For partial insertion into a bone and/or cartilage (claimed).

ADVANTAGE - The bone screw reduces the occurrence of post-operative failure due to infection and/or improper healing about the pedicle screw (10).

DESCRIPTION OF DRAWING(S) - The figure is a partial perspective view of the front side pedicle screw.

Pedicle screw (10)
Head (20)
Lower portion (30)
Access opening (38)

Mechanical mechanism (40)
Pump (42)
pp; 22 DwgNo 1/8

Technology Focus:

TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Component: The lower portion includes at least one cavity that contains at least one electrical mechanism, at least one mechanical mechanism (40), and/or at least one medical substance. The cavity includes at least one access opening (38) on an outer surface of the lower portion. The mechanical mechanism includes a pump (42). The electrical mechanism includes a battery, and/or a generator, or a microchip controller. The bone screw includes a cap or cover that at least partially obstructs the access opening. The head and/or lower portion at least partially includes a coating material including a compound that facilitates in the insertion and/or securing of the lower portion in the bone and/or cartilage; promotes and/or **inhibits** **bone** and/or other tissue **growth** ; **inhibits** rejection of the **bone** screw; **inhibits** rejection of components connected to and/or located adjacent to the bone screw; reduces infection; reduces inflammation; reduces pain; promotes healing of surrounding tissue; combats cancer and/or other diseases; combats biological abnormalities; and/or functions as a location and/or visual indicator.

PHARMACEUTICALS - Preferred Component: The medical substance includes antithrombogenic agent, steroid, thioprotese inhibitor, antimicrobial, antibiotic, tissue plasma activator, monoclonal antibody, anti fibrosis compound, hormone, growth factor, anti-mitotic agent, immunosuppressive agent, sense or antisense oligo-nucleotide, nucleic acid analogue, inhibitor of transcription factor activity, anti-neoplastic compound, chemotherapeutic compound, radioactive agent, growth factor, antiplatelet compound, antitabolite compound, anti-inflammatory compound, anticoagulant compound, antimitotic compound, antioxidant, antimetabolite compound, anti-migratory agent, anti-matrix compound, anti-vital compound, anti-proliferative, anti-fungal compound, anti-protozoal compound, human tissue; animal tissue; synthetic tissue; human cells; animal cells; synthetic cells; bone-stimulation matter; bone-growth matter; and/or bone activating matter

Title Terms: BONE; SCREW; INSERT; BONE; CARTILAGE; COMPRISE; LOWER; PORTION ; INTERFACE; DESIGN; DISCHARGE; ELECTRIC; CURRENT; MEDICAL; SUBSTANCE; ADJACENT; BONE; CARTILAGE

Derwent Class: B07; P31; S05

International Patent Class (Main): A61B-017/56

8/9/1 (Item 1 from file: 73)
DIALOG(R)File 73:EMBASE

02000151 EMBASE No: 1981051319
The effect of direct electrical current **stimulation on the bone/porous metallic implant interface**
Salman N.N.; Park J.B.
Dept. Interdiscip. Stud., Coll. Engin., Clemson Univ., Clemson, S.C. 29631 United States
Biomaterials (BIOMATERIALS) (United Kingdom) 1980, 1/4 (209-213)
CODEN: BIMAD
DOCUMENT TYPE: Journal
LANGUAGE: ENGLISH

Cylindrical porous plugs (6.35 mm dia. 11 mm long, average pore size of 190 mum dia.) made of electrically conductive Co-Cr-Mo surgical alloy powders were implanted in the canine femur. An electrical stimulation device (mercury battery, 1.35 V, connected in series with a 150 kOmega resistor) was attached to all implants directly. The in vivo current was about 8 muA for the stimulated implants while no current was delivered for the control ones. After predetermined implant periods, tensile test specimens were made to measure the interfacial strenth between bone and implants. Some samples were used for histological observations. The present results show that in vivo electrical stimulation substantially increased the strength of the union between porous implants and bone when compared to the controls up to 12 weeks. Histological observations show that the increased strength is mainly due to the increased new bone formation in the pores of implants. It was also observed that the fractional callus volume in the intramedullary canal for the stimulated samples retained more than the controls after reaching maximum at 3 weeks.

DRUG DESCRIPTORS:
*chromium; *cobalt; *molybdenum
MEDICAL DESCRIPTORS:
*bone graft; *. **osteosynthesis** ; *prosthesis fixation
electricity; electrostimulation; femur; bone; animal experiment; dog
CAS REGISTRY NO.: 16065-83-1, 7440-47-3 (chromium); 7440-48-4 (cobalt); 7439-98-7 (molybdenum)
SECTION HEADINGS:
033 Orthopedic Surgery
037 Drug Literature Index
027 Biophysics, Bioengineering and Medical Instrumentation

8/9/2 (Item 2 from file: 73)
DIALOG(R)File 73:EMBASE

00302196 EMBASE No: 1975074522
Investigations on the healing of bone fractures under the influence of electric direct current
UNTERSUCHUNGEN ZUR KNOCHENBRUCHHEILUNG UNTER EINFLUSS VON ELEKTRISCHEM GLEICHSTROM
Bauer U.; Kinzl L.; Wolter D.
Abt. Unfallchir., Dept. Chir., Univ. Ulm Germany
Zeitschrift fur Orthopadie und Ihre Grenzgebiete (Z. ORTHOP. IHRE GRENZGEB.) 1974, 112/3 (402-407)
CODEN: ZOIGA
DOCUMENT TYPE: Journal
LANGUAGE: GERMAN

Concerning the healing of bone after osteotomy and **osteosynthesis** by plates comparative investigations were carried out on the forelegs of sheep, with and without subjecting the osteotomy area to the direct influence of electric direct current (DC). Within 8 wk after **osteosynthesis** without succeeding application of electricity, there developed within an appropriate time extensive osseous consolidation, as shown radiologically and histologically. On the other hand, in all animals of those groups subjected to DC, signs of local inflammation appeared about the wound area 3 to 4 days after the operation. Further observation revealed signs of a progressive osteolysis caused by superinfection. The study concludes (contrary to the reports from other groups of investigators) that the direct application of DC potentials in the arrangement used by the authors (plate = cathode) does not lead to the desired aim of promoting the healing of bone fractures.

MEDICAL DESCRIPTORS:
*direct **current** ; * **electricity** ; *electrostimulation; *fracture; * fracture healing; * **osteosynth**esis ; *osteotomy; *pathology; *sheep injury; theoretical study
SECTION HEADINGS:
033 Orthopedic Surgery
027 Biophysics, Bioengineering and Medical Instrumentation
019 Rehabilitation and Physical Medicine
005 General Pathology and Pathological Anatomy

8/9/4 (Item 2 from file: 144)
DIALOG(R)File 144:Pascal

04057862 PASCAL No.: 75-0000900
UNTERSUCHUNGEN ZUR KNOCHENBRUCHHEILUNG UNTER EINFLUSS VON ELEKTRISCHEM GLEICHSTROM
(ETUDES SUR LA CONSOLIDATION DES FRACTURES SOUS L'INFLUENCE DU COURANT ELECTRIQUE CONTINU)
BAUER U; KINZL L; WOLTER D
DEP. CHIR., UNIV. ULM, 7900 ULM,D
Journal: Z. ORTHOP. GRENZGEB., 1974, 112 (3) 402-407
Availability: CNRS-3853
No. of Refs.: 27 REF.
Document Type: P (SERIAL) ; A (ANALYTIC)
Country of Publication: FEDERAL REPUBLIC OF GERMANY
Language: GERMAN Summary Language: ENGLISH
OSTEOTOMIE ET OSTEOSYNTHESE SUR LA PATTE ANTERIEURE DU MOUTON SOUMISE OU NON A L'INFLUENCE DIRECTE DU COURANT ELECTRIQUE CONTINU. CHEZ LES ANIMAUX SOUMIS AU COURANT ELECTRIQUE, SIGNES LOCAUX D'INFLAMMATION DES LE 3-4E JOUR, PUIS OSTEOLYSE PROGRESSIVE PAR SURINFECTION

English Descriptors: ORTHOPEDIC SURGERY; CONSOLIDATION; DIRECT **CURRENT** ; **ELECTRICAL CURRENTS** ; FRACTURES; **OSTEOSYNTHESIS** ; EXPERIMENTAL DISEASE ; VARIOUS TREATMENTS; TRAUMA
English Generic Descriptors: BONE AND JOINT DISEASES

French Descriptors: FRACTURE; PATHOLOGIE EXPERIMENTALE; OSTEOSYNTHESE; COURANT CONTINU; CONSOLIDATION; MOUTON; TRAUMATISME; CHIRURGIE ORTHOPEDIQUE; TRAITEMENT DIVERS; COURANT ELECTRIQUE; MAMMIFERE; RESULTAT
French Generic Descriptors: PATHOLOGIE OSTEOARTICULAIRE

Classification Codes: 357A03

8/9/6 (Item 4 from file: 144)
DIALOG(R)File 144:Pascal

02261356 PASCAL No.: 79-0200002
DIE ANREGUNG DER KALLUSBILDUNG DURCH INTERFERENZSTROEME
(LA STIMULATION DE LA FORMATION DU COL PAR DES COURANTS D'INTERFERENCE)
GUTTLER P; KLEDITZSCH J
MED. AKAD. CARL GUSTAV CARUS DRESDEN ORTHOPAEDISCHES KLIN., DRESDEN 8019,GERMAN DEMOCRATIC REPUBLIC
Journal: DTSCHE GESUNDH.-WES., 1979, 34 (2) 91-94
Availability: CNRS-6225
No. of Refs.: 22 REF.
Document Type: P (SERIAL) ; A (ANALYTIC)
Country of Publication: GERMAN DEMOCRATIC REPUBLIC
Language: GERMAN Summary Language: RUSSIAN; ENGLISH
APPLICATION DE COURANTS DE MOYENNE FREQUENCE SUR DES OSTEOTOMIES TIBIALES REALISEES CHEZ DES LAPINS, ET FIXEES PAR DES PLAQUES AO. A LA RADIOGRAPHIE, FORMATION PLUS RAPIDE ET PLUS IMPORTANTE DU COL

English Descriptors: ORTHOPEDIC SURGERY; CONSOLIDATION; **ELECTRICAL CURRENTS** ; EXPERIMENTAL STUDY; LAGOMORPHA; RABBIT; MAMMALIA; BONE; **OSTEOSYNTHESIS** ; OSTEOTOMY; PLATES; RADIOGRAPHY; STIMULATION; TIBIA;

VARIOUS TREATMENTS
English Generic Descriptors: BONE AND JOINT DISEASES
French Descriptors: OSTEOTOMIE; TIBIA; OSTEOSYNTHESE; CONSOLIDATION; STIMULATION; COURANT ELECTRIQUE; ETUDE EXPERIMENTALE; PLAQUE; LAPIN; RADIOGRAPHIE; OS; CHIRURGIE ORTHOPEDIQUE; TRAITEMENT DIVERS; LAGOMORPHA; MAMMALIA
French Generic Descriptors: PATHOLOGIE OSTEOARTICULAIRE

Classification Codes: 357A03

8/9/7 (Item 5 from file: 144)
DIALOG(R)File 144:Pascal

01587244 PASCAL No.: 77-0422306
ETUDE EXPERIMENTALE DES POSSIBILITES DE STIMULATION ELECTRIQUE DU DEVELOPPEMENT DU CAL OSSEUX.
BAUX S; FOURNIER J; SEROUSSI S; ORCEL L
LAB. PHYSIOL.,U.E.R. CRETEIL
Journal: J. CHIR., 1977, 113 (5-6) 551-558
Availability: CNRS-3044
Document Type: P (SERIAL) ; A (ANALYTIC)
Country of Publication: FRANCE
Language: FRENCH Summary Language: ENGLISH
EXPERIENCES SUR CHIENS. DANS CERTAINES CONDITIONS L'OSTEOSYNTHESE DIRECTE ET L'ELECTROSTIMULATION PEUVENT ETRE ASSOCIEES.

English Descriptors: CALLUS; DOG; ORTHOPEDIC SURGERY; **ELECTRICAL CURRENTS** ; FRACTURES; **OSTEOSYNTHESIS** ; EXPERIMENTAL DISEASE; STIMULATION ; VARIOUS TREATMENTS; TRAUMA
English Generic Descriptors: TRAUMATOLOGY

French Descriptors: FRACTURE; PATHOLOGIE EXPERIMENTALE; STIMULATION; CAL; COURANT ELECTRIQUE; OSTEOSYNTHESE; CHIEN; TRAITEMENT DIVERS; TRAUMATISME; CHIRURGIE ORTHOPEDIQUE; MAMMIFERE; CARNIVORE
French Generic Descriptors: TRAUMATOLOGIE

Classification Codes: 357A04A

8/9/8 (Item 6 from file: 144)
DIALOG(R)File 144:Pascal

01034510 PASCAL No.: 76-0235830
TRAUMA-SCHOCK
(TRAUMATISME-CHOC)
Journal: ARCH. (LANGENBECKS) CHIR., 1976 263-331
Availability: CNRS-7605
No. of Refs.: DISSEM.
Document Type: P (SERIAL); C (CONFERENCE PROCEEDINGS) ; A (ANALYTIC)
Country of Publication: FEDERAL REPUBLIC OF GERMANY
Note: SUPPL.; (CHIR. FORUM'76 EXP. KLIN. FORSCH. KONGR. DTSCH. GES. CHIR. 93; MUENCHEN; 1976)
Language: GERMAN Summary Language: ENGLISH
PLUSIEURS ARTICLES SONT CONSACRES AU TRAITEMENT DES PSEUDARTHROSES PAR OSTEOSYNTHESE, CHAMP MAGNETIQUE, COURANT ELECTRIQUE

English Descriptors: REVIEW; MAGNETIC FIELD; ORTHOPEDIC SURGERY; SHOCK; CONGRESS; **ELECTRICAL CURRENTS** ; FRACTURES; HUMAN; **OSTEOSYNTHESIS** ; PSEUDOARTHROSIS; VARIOUS TREATMENTS; TRAUMA
English Generic Descriptors: TRAUMATOLOGY

French Descriptors: CHOC; TRAUMATISME; CONGRES; PSEUDARTHROSE; FRACTURE; OSTEOSYNTHESE; COURANT ELECTRIQUE; CHAMP MAGNETIQUE; HOMME; CHIRURGIE ORTHOPEDIQUE; TRAITEMENT DIVERS; ARTICLE SYNTHESE
French Generic Descriptors: TRAUMATOLOGIE

Classification Codes: 357A04

8/9/9 (Item 7 from file: 144)
DIALOG(R)File 144:Pascal

01033649 PASCAL No.: 76-0234919
NEUE WEGE ZUR BEHANDLUNG VON KAHNBEIN-PSEUDOARTHROSEN DER HAND
(NOUVELLES VOIES DANS LE TRAITEMENT DES PSEUDARTHROSES DU SCAPHOIDE DE LA MAIN)
FELDMEIER C; WILHELM K; HAUER G
CHIR. KLIN., UNIV. MUENCHEN,8 MUENCHEN 2
Journal: AKTUELLE CHIR., 1976, 11 (2) 81-92
Availability: CNRS-16088
No. of Refs.: 24 REF.
Document Type: P (SERIAL) ; A (ANALYTIC)
Country of Publication: FEDERAL REPUBLIC OF GERMANY
Language: GERMAN Summary Language: ENGLISH
CLINIQUE, CAUSES DES PSEUDARTHROSES. RADIOLOGIE. RAPPEL DES DIFFERENTES TECHNIQUES CHIRURGICALES. TRAITEMENT ELECTRODYNAMIQUE DANS 3 FRACTURES RECENTES DU SCAPHOIDE ET 10 PSEUDARTHROSES; CONSOLIDATION OSSEUSE APRES 10 A 14 SEMAINES, UNE STYLOIDECTOMIE COMPLEMENTAIRE EST NECESSAIRE EN CAS DE DOULEURS

English Descriptors: ORTHOPEDIC SURGERY; **ELECTRICAL CURRENTS** ; FRACTURES ; HUMAN; HAND; **OSTEOSYNTHESIS** ; PSEUDOARTHROSIS; OS NAVICULARE CARPI; TREATMENT; VARIOUS TREATMENTS; TRAUMA
English Generic Descriptors: BONE AND JOINT DISEASES

French Descriptors: FRACTURE; SCAPHOIDE CARPIEN; PSEUDARTHROSE; OSTEOSYNTHESE; TRAITEMENT; COURANT ELECTRIQUE; HOMME; TRAUMATISME; MAIN; CHIRURGIE ORTHOPEDIQUE; TRAITEMENT DIVERS
French Generic Descriptors: PATHOLOGIE OSTEOARTICULAIRE

Classification Codes: 357A02B

8/9/10 (Item 8 from file: 144)
DIALOG(R)File 144:Pascal

00345030 PASCAL No.: 73-0001972
BESCHLEUNIGUNG DER KNUECHERNEN HEILUNG VON OSTEOTOMIEN AN SCHAFEN DURCH ELEKTRISCHEN STROM
(ACCELERATION DE LA CICATRISATION OSSEUSE DES OSTEOTOMIES DIAPHYSAIRES PAR LE COURANT ELECTRIQUE)
WEIGERT M; WERHAHN C; MUELLING M

OSKAR-HELENE-HEIM,1000 BERLIN
Journal: Z. ORTHOP. GRENZGEB., 1972, 110 (6) 959-962
Availability: CNRS-3853
Document Type: P (SERIAL)
Country of Publication: FEDERAL REPUBLIC OF GERMANY
Language: GERMAN
CHEZ L'ANIMAL APRES OSTEOTOMIE ET OSTEOSYNTHESE PAR PLAQUE, IMPLANTATION OSSEUSE D'ELECTRODE EN PLATINE-IRIDIUM ET ETUDE DE LA MINERALISATION PAR SCINTIGRAPHIE AU SUP 87M SR

English Descriptors: **ELECTRICAL CURRENTS** ; FRACTURES; **OSTEOSYNTHESIS**
English Generic Descriptors: BONE AND JOINT DISEASES

French Descriptors: FRACTURE; PATHOLOGIE EXP; OSTEOSYNTHESE; SCINTIGRAPHIE OS; STRONTIUM 87M; CONSOLIDATION FRACTURE; COURANT ELECTRIQUE; PHYSIOPATHOLOGIE; EXPLORATION ISOTOPIQUE; MODIFIE PAR
French Generic Descriptors: PATHOLOGIE OSTEOARTICULAIRE

Classification Codes: 357A03
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JReidel

L9 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:722980 HCAPLUS
DOCUMENT NUMBER: 126:27115
TITLE: Calcitonin reduces steady ionic current of the growth plate
AUTHOR(S): Villa, Isabella; Sosio, Corrado; De Ponti, Alessandro; Benelli, Fiorenza Dondi; Rubinacci, Alessandro
CORPORATE SOURCE: Unita Metabolica dell'Osso, Istituto Scientifico H San Raffaele, Milan, 20132, Italy
SOURCE: Electro- and Magnetobiology (1996), 15(3), 175-182
CODEN: ELAGE9; ISSN: 1061-9526
PUBLISHER: Dekker
DOCUMENT TYPE: Journal
LANGUAGE: English
AB We tested the hypothesis that calcitonin regulates the elec. current assocd. with ionic exchanges occurring at the growth plate. For this purpose, we measured the net outward current driven by the growth plate of metatarsal bones of weanling mice by means of a voltage-sensitive probe system vibrating in two dimensions. The c.d. was reduced by calcitonin in a dose-dependent manner. Maximal redn. (.apprx.40%) was obtained at a calcitonin concn. of 5 IU/mL. No effect was obsd. for calcitonin concns. .ltoreq.0.05 IU/mL. When chloride was removed from the medium, calcitonin was less effective in reducing the net c.d. Neither calcitonin gene-related peptide nor clodronate was able to induce any measurable change of the c.d. Our results indicate that calcitonin acts on the ionic exchanges occurring at the growth plate and suggest that endogenous elec. signals in bone might be modulated by hormones.
AB We tested the hypothesis that calcitonin regulates the elec. current assocd. with ionic exchanges occurring at the growth plate. For this purpose, we measured the net outward current driven by the growth plate of metatarsal bones of weanling mice by means of a voltage-sensitive probe system vibrating in two dimensions. The c.d. was reduced by calcitonin in a dose-dependent manner. Maximal redn. (.apprx.40%) was obtained at a calcitonin concn. of 5 IU/mL. No effect was obsd. for calcitonin concns. .ltoreq.0.05 IU/mL. When chloride was removed from the medium, calcitonin was less effective in reducing the net c.d. Neither calcitonin gene-related peptide nor clodronate was able to induce any measurable change of the c.d. Our results indicate that calcitonin acts on the ionic exchanges occurring at the growth plate and suggest that endogenous elec. signals in bone might be modulated by hormones.
IT Electric current
(biol.; calcitonin reduces steady ionic current of weanling mouse growth plate)
IT Bone
(growth plate; calcitonin reduces steady ionic current of weanling mouse growth plate)

=>

John Sims EIC 3700 ext 23507

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? ds;show files

Set     Items   Description
S1   14653488   BONE? ? OR VERTEBRA?? OR CARTILAGE? ?
S2    6928807   GROW???
S3       5184   (REDUC??? OR SLOW??? OR INHIBIT??? OR ARREST??? OR DIMINIS-
            H??? OR DECREAS??? OR ABAT??? OR LESSEN???)(3N)(S1(5N)S2)
S4      41878   (ELECTRICAL? OR ELECTRICITY?)(3N)CURRENT? ?
S5          1   S3(S)S4
S6      36074   OSTEOSYNTHESIS?
S7         10   S4 AND S6
S8         10   RD  (unique items)
S9         75   (REDUC??? OR SLOW??? OR INHIBIT??? OR ARREST??? OR DIMINIS-
            H??? OR DECREAS??? OR ABAT???? OR LESSEN???)(3N)S6
S10         0   S4 AND S9
S11     18116   GROWTH()PLATE? ?
S12         1   S4(10N)S11
File   2:INSPEC 1898-2006/May W4
         (c) 2006 Institution of Electrical Engineers
File   5:Biosis Previews(R) 1969-2006/Jun W1
         (c) 2006 The Thomson Corporation
File   6:NTIS 1964-2006/May W3
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File   8:Ei Compendex(R) 1970-2006/May W4
         (c) 2006 Elsevier Eng.  Info. Inc.
File  34:SciSearch(R) Cited Ref Sci 1990-2006/Jun W1
         (c) 2006 Inst for Sci Info
File  35:Dissertation Abs Online 1861-2006/May
         (c) 2006 ProQuest Info&Learning
File  65:Inside Conferences 1993-2006/Jun 08
         (c) 2006 BLDSC all rts. reserv.
File  73:EMBASE 1974-2006/Jun 09
         (c) 2006 Elsevier Science B.V.
File  94:JICST-EPlus 1985-2006/Mar W1
         (c)2006 Japan Science and Tech Corp(JST)
File  99:Wilson Appl. Sci & Tech Abs 1983-2006/Apr
         (c) 2006 The HW Wilson Co.
File 144:Pascal 1973-2006/May W2
         (c) 2006 INIST/CNRS
File 155:MEDLINE(R) 1951-2006/Jun 08
         (c) format only 2006 Dialog
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
         (c) 1998 Inst for Sci Info
File 441:ESPICOM Pharm&Med DEVICE NEWS 2006/Jan W1
         (c) 2006 ESPICOM Bus.Intell.
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? ds;show files

Set     Items   Description
S1      65776   BONE? ?
S2     191288   GROWTH?
S3    1936683   PLATE? ?
S4      18429   (ELECTRICAL OR ELECTRICITY)(3N)CURRENT? ?
S5        546   S2(2N)S3
S6         28   S1(S)S5
S7          0   S4 AND S6
S8        225   (REDUC??? OR SLOW??? OR INHIBIT??? OR ARREST??? OR DIMINIS-
             H??? OR DECREAS??? OR ABAT??? OR LESSEN???)(3N)(S1(5N)S2)
S9          3   S4 AND S8
S10         0   S4(10N)S5
File 347:JAPIO Dec 1976-2005/Dec(Updated 060404)
         (c) 2006 JPO & JAPIO
File 350:Derwent WPIX 1963-2006/UD,UM &UP=200636
         (c) 2006 The Thomson Corp.
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(FILE 'HOME' ENTERED AT 14:06:58 ON 09 JUN 2006)

FILE 'HCAPLUS, BIOTECHNO, LIFESCI' ENTERED AT 14:08:19 ON 09 JUN 2006

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L1          9891 S (BONE OR VERTEBRA#)(3W)GROW##
L2           785 S OSTEOSYNTHESIS
L3        615347 S (ELECTRICAL OR ELECTRICITY)(3W)CURRENT OR ELECTRODE#
L4            17 S (L1 OR L2) AND L3
L5            17 DUP REMOVE L4 (0 DUPLICATES REMOVED)
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FILE 'MEDLINE, BIOSIS, EMBASE, BIOTECHNO, LIFESCI, HCAPLUS' ENTERED AT 14:30:29 ON 09 JUN 2006

```
L6         87637 S OSTEOGENESIS OR OSTEOSYNTHESIS OR BONE#(2N)GROWTH
L7          1279 S L6(5W)(REDUC### OR SLOW### OR INHIBIT### OR DECREAS### OR AB
L8        191108 S (ELEC OR ELECTRIC OR ELECTRICAL OR ELECTRICITY)(3W)CURRENT#
L9             1 S L7 AND L8
```

John Sims EIC 3700 ext 23507